

Mixing Zone Predictions for

Town of Gretna WTP

Effluent Flow = 0.027 MGD
Stream 7Q10 = 0.057 MGD
Stream 30Q10 = 0.143 MGD
Stream 1Q10 = 0.000001 MGD
Stream slope = 0.0005 ft/ft
Stream width = 8.0 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1759 ft
Length = 252.69 ft
Velocity = .0924 ft/sec
Residence Time = .0317 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .2709 ft
Length = 173.7 ft
Velocity = .1214 ft/sec
Residence Time = .0166 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .0883 ft
Length = 455.36 ft
Velocity = .0592 ft/sec
Residence Time = 2.1372 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 46.79% of the 1Q10 is used.

Virginia DEQ Mixing Zone Analysis Version 2.1